



Synoptic analysis of heat-related mortality in Sydney, Australia, 1993-2001

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Abstract:

Exposure to extremely hot weather has been associated with increased mortality. Temporal Synoptic Index is an effective method used to analyze the relationship between mortality and combined weather factors. The aim of this study is to examine the short-term effect of ambient heat on mortality in Sydney during the warmest 6-month period (October-March) for the years 1993-2001. Eleven synoptic categories were related to daily mortality rates in Sydney. Two distinctive warm categories were associated with significantly higher mortality rates. Hot, dry and relatively rare Synoptic Category 7 (SC7) days showed the highest daily mortality rates, followed by warm and humid SC3 days, which occurred more frequently. Increased mortality was more pronounced among the elderly population, and gender-stratified analysis showed women to be more vulnerable. Mortality on the day of the weather event was higher than 1 or 2 days after the adverse synoptic situation. Ozone and particulate matter smaller than 10 μm were found at high concentrations in SC3 and SC7, respectively, but their impact on mortality was not clear. The population of Sydney was found to be vulnerable to high temperatures, with a lower susceptibility than those of some cities in the USA and Europe. © 2008 ISB.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Meteorological Factors, Meteorological Factors, Temperature, Other Exposure

Air Pollution: Interaction with Temperature, Ozone, Particulate Matter

Temperature: Extreme Heat, Fluctuations

Other Exposure: cloud cover

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

Climate Change and Human Health Literature Portal

Non-United States

Non-United States: Australasia

Health Impact: 

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Respiratory Effect


Cardiovascular Effect: Other Cardiovascular Effect

Cardiovascular Disease (other): cerebrovascular mortality; circulatory disease mortality

Respiratory Effect: Other Respiratory Effect

Respiratory Condition (other) : respiratory disease mortality

Population of Concern: A focus of content

Population of Concern: 

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type: 

format or standard characteristic of resource

Research Article

Timescale: 

time period studied

Time Scale Unspecified